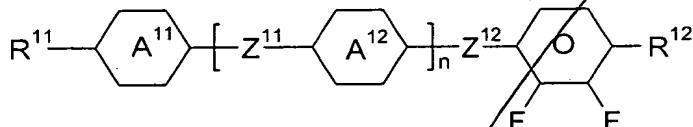


Patent Claims

51/51 1. A nematic liquid-crystal medium, which comprises
 a) a dielectrically negative, liquid-crystalline component A which
 comprises one or more dielectrically negative compounds of the
 formula I

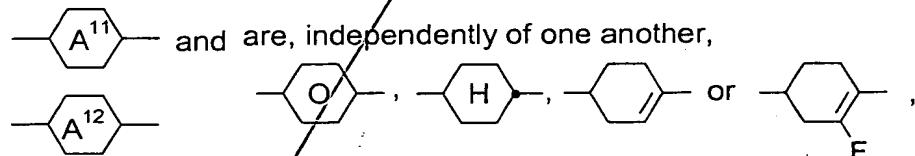
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15

in which

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25

R^{11} is alkyl having from 1 to 7 carbon atoms, alkoxy
 having from 1 to 7 carbon atoms or alkenyloxy having
 from 2 to 7 carbon atoms,

 R^{12}

R^{12} is alkyl or alkoxy having from 1 to 7 carbon atoms or
 alkenyl, alkenyloxy or alkoxyalkyl having from 2 to 7
 carbon atoms,

30

Z^{11} and Z^{12} one of OCF_2 or CF_2O , and the other is a single bond, and

n is 0 or 1, and

35

$\text{b})$ a dielectrically negative, liquid-crystalline component,
 B and

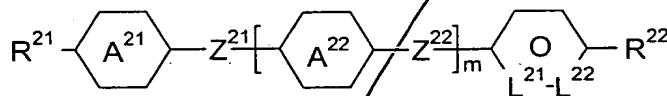
optional

c)
d)
5

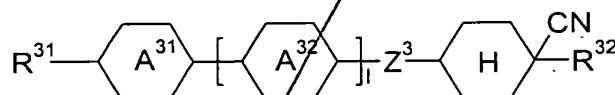
a dielectrically neutral, liquid-crystalline component C,
and
a dielectrically positive, liquid-crystalline component
D.

2. A liquid-crystal medium of claim 1, wherein component B comprises
one or more compounds selected from the group consisting of the
compounds of the formulae II and III

10



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in which

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R^{21} is alkyl or alkoxy having from 1 to 7 carbon atoms or
alkoxyalkyl, alkenyl or alkenyloxy having from 2 to 7
carbon atoms,

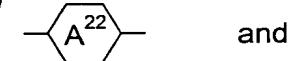
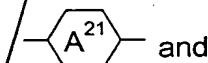
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R^{22} is alkyl or alkoxy having from 1 to 7 carbon atoms or
alkoxyalkyl, alkenyl or alkenyloxy having from 2 to 7
carbon atoms,

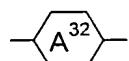
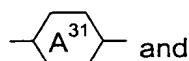
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Z^{21} and Z^{22} are each, independently of one another, $-\text{CH}_2-\text{CH}_2-$,
 $-\text{CH}=\text{CH}-$, $-\text{C}\equiv\text{C}-$, $-\text{COO}-$ or a single bond,

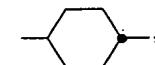
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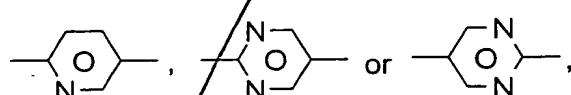
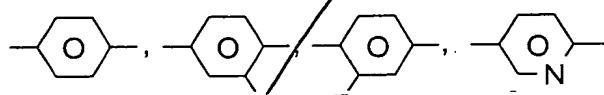
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are each, independently of one another,



10



15 L^{21} and L^{22} are both C-F or one of the two is N and the other is C-F,

15

m is 0 or 1,

20 Z^3 is $-\text{CH}_2\text{CH}_2-$, $-\text{CH}=\text{CH}-$, $-\text{C}\equiv\text{C}-$, $-\text{COO}-$ or a single bond,

20

R^{31} and R^{32} are each, independently of one another, alkyl or alkoxy having from 1 to 7 carbon atoms or alkoxy-alkyl, alkenyl or alkenyloxy having from 2 to 7 carbon atoms, and

25

l is 1 or 2.

3. A liquid-crystal medium of Claim 2, which comprises one or more compounds of the formula II.
- 30 4. A liquid-crystal medium of Claim 2 which comprises one or more compounds of the formula III.
5. A liquid-crystal medium of Claims 1 which comprises a component C.
- 35 6. A liquid-crystal medium of Claim 1, which comprises a component D.

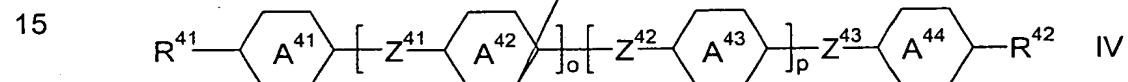
7. An electro-optical display comprising a liquid-crystal medium according of Claim 1.

5 8. A display according to Claim 7, which is an active matrix display.

9. A display according to Claim 7 which is an ECB or IPS display.

10 10. The liquid-crystal medium of claim 1, wherein R¹¹ is alkyl, alkoxy, or alkenyloxy of Z to 4 carbon atoms and one of Z¹¹ or Z¹² is OCF₂.

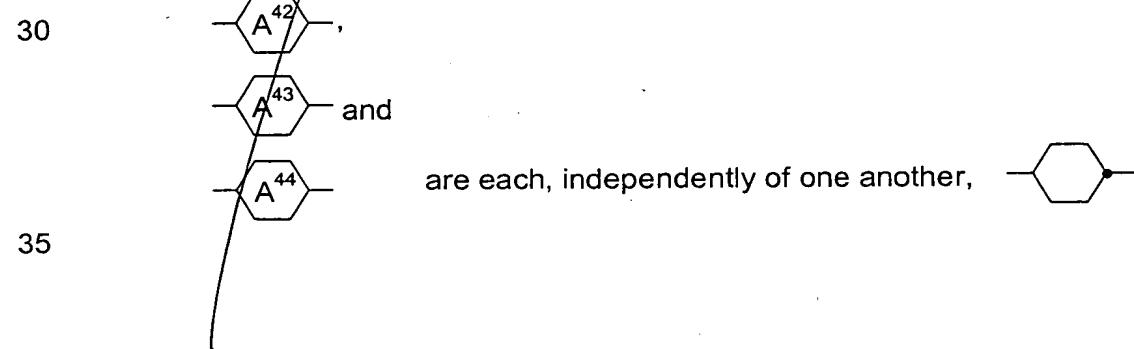
11. The liquid-crystal medium of claim 5, wherein component C comprises at least one compound of the formula IV.



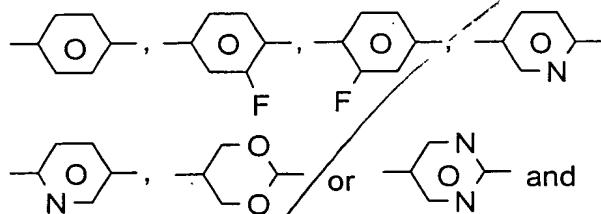
20 in which

25 R⁴¹ and R⁴² are each, independently of one another, as defined above for R²¹ in the case of the formula II,

Z⁴¹, Z⁴² and Z⁴³ are each, independently of one another, -CH₂CH₂-, -CH=CH-, -COO- or a single bond,



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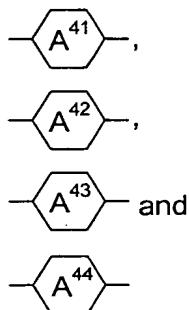


o and p, independently of one another, are 0 or 1,

10

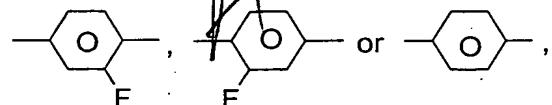
12. The liquid-crystal medium of claim 6, wherein component D comprises at least one compound of the formula V.

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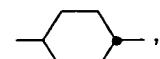
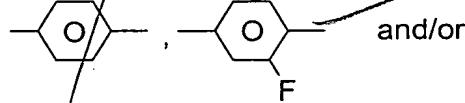
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are each, independently of one another,



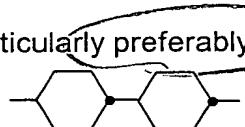
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and very particularly preferably at least two of these rings

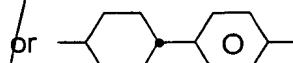


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where two adjacent rings are very particularly preferably linked directly to one another, preferably



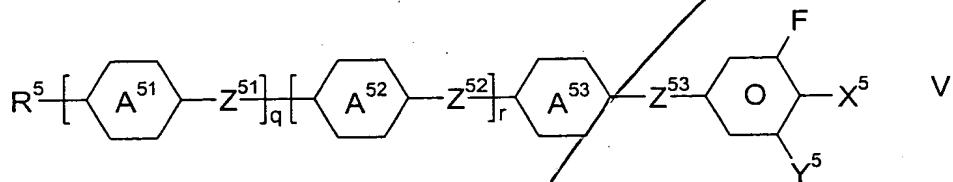
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and optionally

d) one or more dielectric positive compound(s) of the formula V

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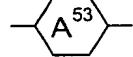
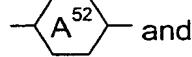
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R^5 is alkyl or alkoxy having from 1 to 7 carbon atoms, or alkoxyalkyl, alkenyl or alkenyloxy having from 2 to 7 carbon atoms,

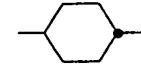
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Z^{51} , Z^{52} and Z^{53} are each, independently of one another, $-\text{CH}_2-\text{CH}_2-$, $-\text{CH}=\text{CH}-$, $-\text{C}\equiv\text{C}-$, $-\text{COO}-$ or a single bond,

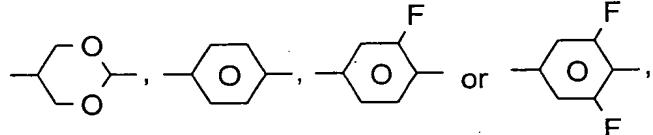
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are each, independently of one another,



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X^5 is F, OCF_2H or OCF_3 , and

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Y^5 is H or F, preferably F in the case where $X = \text{F}$ or OCF_2H , and

q and r are each, independently of one another, 0 or 1.

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In a further preferred embodiment, the medium comprises one or more dielectrically negative compounds of the formula VI.

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13. The liquid-crystal medium of claim 1, which comprises 5% to 85% by weight of component A, 5% to 85% by weight of component B, 0 to 50% by weight of component C and 0 to 40% by weight of component D.

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14. A display according to claim 8, which further comprises a thin film transistor or varistor.

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15. A display according to claim 7, which further comprises a three-pole switching element.

Add
A2

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